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EXAMINER

NGUYEN, HOAN C

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,165

Applicant(s)

YOSHII ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 17-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-16 is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

This application contains claims directed to the following patentably distinct species of the claimed invention:

- A. The species of reflector comprising plurality of light reflective concave portions formed on a surface of a base material (claims 1-16).
- B. The species of reflector comprising of plurality of light reflective concave portions with one side portion having larger reflectance magnitude than an opposing side portion (claim 17).
- C. The species of reflector comprising base material having a light reflecting surface and plurality of curved portions, which is formed on a surface (not a light reflecting surface) of the base material acting as the diffusive light guide (claims 18-27).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, there is no generic claim.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Newly submitted claims 17-27 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 17 now includes a limitation "one side portion having larger reflectance magnitude than an opposing side portion" which was not originally presented; claims 18-27 now include a limitation "base material having a light reflecting surface and plurality of curved portions, which is formed on a surface (not a light reflecting surface) not of the base material" which was not originally presented. As originally presented, the Examiner has considered and examined only the originally presented claims which have a plurality of light reflective concave portions formed on a surface of a base material.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for

prosecution on the merits. Accordingly, claim 17-27 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 7 are rejected since the term "an inclination angle is maximum" is a relative term which renders the claim indefinite. The term "maximum" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Applicant needs to provide standard of "an inclination angle is maximum". Therefore, the prior art (Fig. 15) can consider "an inclination angle being maximum"

Claims 2-6 and 8-9 are rejected since they depend on the infinite claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Prior Art (Figs.15-16) admitted by applicant.

In regard to claim 1-2, applicant admits (Fig. 15, page 2 line 14 to page 3 line 3) a prior art that a reflector comprising a plurality of light reflective concave portions formed on a surface of a base material, each of the concave portions being a concave surface and being formed so that an inclination angle (an absolute value of an angle between a plane tangential to a point on the concave surface and the surface of the base material) is maximum on a side portion of the curved surface;
wherein

- the concave surface of each of the concave portions has a single minimal point (a point where the inclination angle becomes zero) according to claim 2.
- the maximum inclination angle (an absolute value) is about 22° (depth about $1\mu\text{m}$ in a range of $0.1\text{-}3\mu\text{m}$ and pitch about $5\mu\text{m}$ in a range $5\text{-}50\mu\text{m}$, thus $\arctan(1/2.5) = 22^\circ$), which is in a range of 2° to 80° according to claim 3 and in a range of 4° to 35° according to claim 4

- the plurality of the concave portions are formed randomly with a depth thereof ranging from 0.1 μm to 3 μm (page 2 lines 27) according to claim 5.
- each of the plurality of the concave portions are arranged irregularly adjacent to each other according to claim 6.
- the reflector is mounted on LCD device according to claim 8.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1 and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Akins et al. (US6285425B1).

Akins et al. teach (Fig. 6) a reflector, comprising a plurality of light reflective concave portions formed on a surface of a base material, each of the concave portions being a concave surface and being formed so that an inclination angle (an absolute value of an angle between a plane tangential to a point on the concave surface and the surface of the base material) is maximized on a side portion of the curved surface.

wherein

- the plurality of the concave portions are formed so that the side portion having the maximum inclination angle of the concave surface is aligned in a particular direction according to claim 8.

- the reflector is formed so that the side portion having the maximum inclination angle of the concave surface of each of the plurality of the concave portions is aligned in a certain direction and is mounted so that the side portion having the maximum inclination angle of the concave surface of each of the plurality of the concave portions can be aligned to be on a far side from a viewpoint of an observer according to claim 9.

Allowable Subject Matter

Claims 10-16 are allowed. The following is an examiner's statement of reasons for allowance:

Claim 10 is allowed since there is no prior teaches reflector comprising

- plurality of concave portions formed on a reflector surface,
- an inner surface of each of the concave portions including a bottom curved surface and a peripheral curved surface,
- the peripheral curved surface being a part of a first sphere having a first radius,
- the bottom curved surface being a second sphere having a second radius larger than the first radius, and the bottom curved surface being located within the peripheral curved surface,

wherein a normal line extending from a center of the first sphere to the reflector surface and a normal line extending from a center of the second sphere to the reflector surface are not collinear.

Claims 11-16 are allowed since they depend on the allowed claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments filed on Feb. 7, 2003 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

A. Akins et al. (US6285425B1) fails to disclose the relationship between the reflecting surface and a reflectance peak or the relationship between the reflector and a viewpoint of an observer.

B. On page 8 lines 9-11, the specification discloses one range of maximum values which could be obtained (Remark page 6 third paragraph).

Examiner's responses to Applicants' ONLY arguments are follows:

A Claims 1 and 9 do not recite anything about the relationship between the reflecting surface and a reflectance peak or the relationship between the reflector and a viewpoint of an observer.

Claims 1 and 9 do recite ONLY the relationship between the reflecting surface and an inclination angle (not a reflectance peak or a viewpoint of an observer).

Furthermore, applicants raise the issues: Akins's reflector causes the Moire patterns, which may be distracting to the user. To void this disadvantage as applicants implied, reflector is made of concaves with at least two radii of curvature whose centers of curvature lie on non-colinear lines as shown in Figs. 9.A. These features do not cite in claims 1 and 9.

If Akins' reflector causes the Moire patterns, which are generated by superposing light and dark line stripes, the applicants' reflector can cause the Moire patterns, which are generated by superposing light and dark circular stripes, which is distracting to the user even more.

B. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "an inclination angle is maximum") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

chn
June 4, 2003

